IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

LONESTAR INVENTIONS LP,	§	
Plaintiff	§	
	§	
vs.	§	
	§	**CASE NO. 6:07CV261**
NINTENDO OF AMERICA, INC.,	§	**PATENT CASE**
Defendant	§	

MEMORANDUM OPINION AND ORDER

This Claim Construction Opinion interprets the disputed terms in United States Patent No. 5,208,725 ("the '725 patent"). Appendix A contains the disputed terms, as they appear in the claims of the '725 patent. Appendix B contains a chart summarizing the Court's construction of the disputed terms and the parties' agreed constructions.

BACKGROUND

Plaintiff Lonestar Inventions, LP ("Lonestar") accuses Defendant Nintendo of America, Inc. ("Nintendo") of infringing claims in the '725 patent. The '725 patent discloses a capacitor structure that takes advantage of shrinking semiconductor process geometries. This capacitor structure is made of strips of conductive material rather than conductive plates found in the prior art. The conductive strips are charged to produce parallel plate capacitance between the layers of strips and sidewall capacitance between adjacent strips in the same layer. The capacitor structure provides increasing values of capacitance as the dimensions of the capacitor structure shrink.

APPLICABLE LAW

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to

which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). In claim construction, courts examine the patent's intrinsic evidence to define the patented invention's scope. *See id.*; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). This intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id*. Other asserted or unasserted claims can also aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id*. Differences among the claim terms can also assist in understanding a term's meaning. *Id*. For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id*. at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id*. (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id*. (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299

F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id*. Also, the specification may resolve ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex, Inc.*, 299 F.3d at 1325. But, "'[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.'" *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323.

Although extrinsic evidence can be useful, it is "'less significant than the intrinsic record in determining the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id*. at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition is entirely unhelpful to a court. *Id*. Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id*.

CONSTRUCTION OF DISPUTED TERMS IN THE '725 PATENT[1]

semiconductor substrate

Claims 1 and 12 contain the term "semiconductor substrate." Lonestar argues "semiconductor substrate" means "base material upon which the layers of a capacitor structure are formed, wherein the base material is semiconducting with resistivity being intermediate between a metal and an insulator, and having a conducting medium in which the conduction is by electrons and holes." Nintendo argues "semiconductor substrate" means "base made of a material having a resistivity between a metal and an insulator." The parties do not dispute that "substrate" means a base material having resistivity between a metal and an insulator. They disagree as to whether the construction should include that a semiconductor substrate must have layers of a capacitor formed upon it and whether conduction must be by electrons and holes.

The Court construes "semiconductor substrate" as "a semiconducting base material having resistivity between a metal and an insulator." Lonestar's construction states that "layers of a capacitor structure are formed" on the base material. Although the specification describes that layers of a capacitor structure are formed on a base material, the limitation is already described in the claim. Claim 1 states, "On a semiconductor substrate, a capacitor structure comprising a first layer of

[1]The Court held a *Markman* Hearing for this case, *Lonestar Inventions LP v. Xilinx, Inc.*, 6:07-cv-393-LED (filed Aug. 21, 2007) (closed), and *Lonestar Inventions LP v. Sandisk Corp.*, 6:07-cv-374-LED (filed Aug. 10, 2007) (closed). The parties in *Lonestar Inventions LP v. Xilinx, Inc.* and *Lonestar Inventions LP v. Sandisk Corp.* have settled; thus an opinion will not be issued for those cases. Furthermore, Nintendo indicated that it would focus on six terms, "a first layer of conducting strips parallel to each other on said substrate," "overlying," "electrically separated from," "alternately connected to a [said] first node and a [said] second node," "having substantially the same dimensions and separation," and "a third layer of conducting strips alternately connected to said first and second nodes in such a manner that a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes." For the other nine claim terms, Nintendo directs the Court to the briefs of the other defendants, Xilinx, Inc. and Sandisk Corp. Nintendo's Br. 4. Absent Nintendo's express rejection of other defendants' arguments or clear conflict between Nintendo's arguments and other defendants' arguments, the other defendants' arguments will be referred to as Nintendo's arguments in this memorandum opinion.

conducting strips parallel to each other on said substrate." Col. 6:65-68. Because the limitation is stated in the claim, it is not necessary to repeat the limitation in the Court's construction.

As to conduction by electrons and holes, no part of the intrinsic record limits conduction to electrons and holes. In fact, the patent never makes reference to electrons and holes. Lonestar argues that extrinsic evidence shows that semiconductor conduction occurs by electrons and holes. However, extrinsic evidence also shows that conduction in semiconductors does not exclusively rely on electrons and holes. In particular, Nintendo cites to dictionary definitions that state, only "[*c*]*ertain semiconductors* possess two types of carriers, namely, negative electrons and positive holes," THE NEW IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS 1188 (5th ed. 1993) (emphasis added), and "[t]he electric current is *usually* due only to the motion of electrons, *although under some conditions, such as very high temperatures, the motion of ions may be important*." MCGRAW-HILL ENCYCLOPEDIA OF ELECTRONICS AND COMPUTERS 799 (2nd ed. 1988) (emphasis added). These definitions indicate that conduction can occur in semiconductors in ways other than through electrons and holes. The extrinsic record does not support the limitations sought by Lonestar and is at best contradictory. Thus, the Court rejects Lonestar's construction and does not construe "semiconductor substrate" as limited to "having a conducting medium in which the conduction is by electrons and holes." Accordingly, the Court construes "semiconductor substrate" as "a semiconducting base material having resistivity between a metal and an insulator."

a first layer of conducting strips parallel to each other on said substrate

Claim 1 contains the term "a first layer of conducting strips parallel to each other on said substrate." Lonestar contends that "first layer of conducting strips" is "any layer of two consecutive layers of conducting strips that is nearer to the semiconductor substrate than the consecutive layer

selected as the 'second' layer, it need not be the layer most near to the semiconductor substrate, so long as it is more near to it than the 'second layer.'" Lonestar then contends that "on said substrate" means "positioned directly or indirectly above said semiconductor substrate." Nintendo contends that "a layer of conducting strips" means "a layer in which the spacing of the conducting strips and the width of the conducting strips are set to the critical dimensions of the manufacturing process." Nintendo then contends that "the 'first' layer of conducting strips 'on said substrate' is the first deposited layer of conducting strips positioned above and capacitively coupled to the substrate." The parties disagree as to whether "first layer" indicates a sequence limitation, whether the "first layer of conducting strips" must be directly and capacitively coupled to the substrate, and whether the specification limits the claimed invention to "critical dimensions."

As to the dispute on whether "first layer" indicates a sequence limitation, in light of the specification and the claim language itself, "first" indicates that the "first layer" is closer to the semiconductor substrate than the "second layer." *See* Col. 6:67-7:5; *see* Figure 2; *see* Col. 5:40; *see* Col. 5:54-57. With regard to other possible layers, the intrinsic record does not require that the "first layer" must be the layer closest to the semiconductor substrate. Claim 1 applies "comprising" language, which "creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements." *See Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1372 (Fed. Cir. 2005) (citing *Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc.*, 246 F.3d 1336, 1347 (Fed. Cir. 2001) ("[T]he transition 'comprising' creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements")). Nintendo does not rebut this presumption.

However, Nintendo believes that any additional layers of strips that are deposited cannot be

placed closer to the semiconductor substrate than the "first layer." Nintendo argues that the specification does not suggest that a layer of conducting strips could be inserted between the substrate and the first layer. Nintendo in essence suggests that if the specification does not disclose an embodiment, then that embodiment is not allowed for by the patent. This position is not supported by case law. *See Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 699 (Fed. Cir. 1983) ("The claim, not the specification, measures the invention") (citation omitted); *see Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998) ("the claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim") (citation omitted). While claims are read in view of the specification, *Phillips*, 415 F.3d at 1314, this does not mean that the specification must disclose every potential embodiment for such embodiments to be covered by the patent. *Cf. Envtl. Designs*, 713 F.2d at 699. Furthermore, Nintendo's citations to the specification do not support Nintendo's position. *See* Col. 1:37-45; *see* Col. 5:29-57; *see* Col. 2:19-55; *see* Col. 6:18-42. Nintendo's citations instead show that the patentee described the "first layer" relative to the "second layer" while not specifying "first" in relation to the semiconductor substrate. *See, e.g.*, Col. 2:27-30 ("Above and separated from the first layer of conducting strips 24A and 24B by an insulating layer (not shown), is a second layer of conducting strips 26A and 26B"). There is no express or implied restriction in the claims or specification on a layer existing between the first layer and the semiconductor substrate. Thus, "first" does not disallow a layer of conducting strips to be placed between the semiconductor substrate and the first layer.

Concerning the dispute about whether the first layer of conducting strips must be directly and

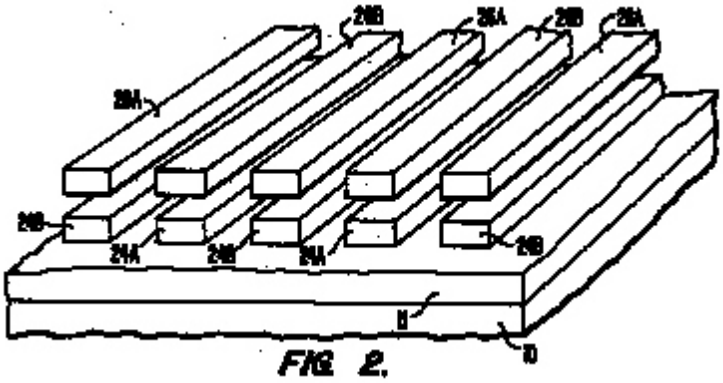

FIG. 2.

capacitively coupled to the substrate, the Court construes "on said substrate" as "positioned directly or indirectly above said semiconductor substrate." The claim language does not require that the first layer be capacitively coupled to the substrate, and the specification shows that the first layer can be directly or indirectly above the substrate. Figure 2 shows a first layer of conducting strips that is separated from the "substrate 10" by an "insulating layer 11." Col. 2:19-22; *see* Figure 2. The strips are positioned above the substrate but not directly on the substrate. Also, while the specification makes reference to the first strips being capacitively coupled to the substrate, it does not do so to define the first layer as Nintendo's proposed construction suggests. *See* Col. 5:5-12. Instead, the specification refers to the strips of various layers being connected to A and B nodes, and the A and B nodes being equally capacitively coupled to the substrate. *See id.* The specification states, "Since the present invention has an equal number of strips in each layer connected to the A and B nodes, the A and B nodes are equally capacitively coupled to the substrate 10. . . . Likewise, the total capacitance of the A and B strips in the second layer to ground are also equal." *Id.* This language does not define the first layer as capacitively coupled to the substrate. Rather, nodes A and B are described as both being capacitively coupled to the substrate. In addition, the claim language in question is clear. Nintendo has not provided sufficient support in the intrinsic record to require the

capacitive coupling limitation to be added to the first layer of strips, particularly when such requirement may be more confusing than the relatively clear claim language. Thus, the Court does not construe "on said substrate" as directly on the substrate or capacitively coupled to the substrate.

In regard to "critical dimensions," Nintendo's proposed construction states that the width of the conducting strips are set to critical dimensions. Claim 1 does not explicitly limit the capacitor structure to "critical dimensions" or even provide other guidance as to the dimensions. "A critical dimension is the smallest distance in a structure or separation between structures which can be controlled in a process." Col. 2:68-Col. 3:3. In contrast, dependent claim 3 provides specific guidance as to the width, height, and depth of the strips by stating, "the relationship between w, h, and d being $w^2 < 2hd$." Col. 7:25-28. When a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include that limitation. *Phillips*, 415 F.3d at 1314-15. In line with this rule, the dimension limitation of dependent claim 3 and the absence of this limitation in independent claim 1 suggests that claim 1 does not include a "critical dimension" limitation because there are not any dimension limitations provided in claim 1 and such limitations exist in claim 3. In light of this reasoning and the additional evidence below showing no "critical dimension" limitation in the specification, Nintendo's arguments fail.

The specification does not limit the capacitor structure to critical dimensions. Table A shows several values for the variable "w" that would satisfy the conditions for making the disclosed invention. Col. 4:55-62. Furthermore, the specification states that "the performance of the present invention is enhanced with each with each [sic] expected dimensional improvement in semiconductor processing technology," implying that the invention may exist in a state that is not the most enhanced state. Col. 5:1-4. This would allow the invention to be made with different

dimensional settings. While the invention may be best enhanced with critical dimensions used with each improvement in semiconductor processing technology, this does not mean that enhancement is not achieved with something less than critical dimensions. Further, as shown in Table A and described in the specification reference to Table A, differing dimensional values (as opposed to only the critical dimensions) may still provide "an enhanced capacitor structure." Col. 4:51-5:4.

While the specification states that "the width and spacing of the conducting strips 24A and 24B are set to critical dimensions," Col. 5:43-45, it does so to teach "enhanc[ing] the side-wall capacitances," Col. 5:45-46, and no one set of dimensions is specified. Any further specification description is mentioned as an example: "i.e., the strips and spacing between the strips are as narrow as possible." Col. 5:46-47. Thus, the claims themselves and the specification both provide support for rejecting the "critical dimension" limitation, and the Court accordingly does not add such a limitation to its construction.

Accordingly, the Court construes "on said substrate" to mean "positioned directly or indirectly above said semiconductor substrate." In light of the Court's resolution of the parties' additional disputes, the rest of the language in the claim term does not require construction.

substantially congruent to said first layer of conducting strips in a top view

Claim 1 contains the term "substantially congruent to said first layer of conducting strips in a top view." Lonestar proposes that the term means "one layer of conducting strips is 'substantially congruent to' another layer of conducting strips 'in a top view' when the strips of each layer, as viewed from the top, have about the same dimensions and about the same shape." Nintendo proposes that the term means "having the same dimension and the same shape within manufacturing tolerances." The parties disagree on whether "substantially" means "about" or "allowing variation

within manufacturing tolerances."

The Court adopts Lonestar's approach and construes "substantially congruent to said first layer of conducting strips in a top view" as "having the same or very close shape and dimensions when viewed from the top." Nintendo's construction is not in line with the meaning of "substantially" as used in the intrinsic record, in the case law, and in common usage. Neither the claims nor the specification explicitly construe "substantially." However, the specification equates congruent to being "identically dimensioned." In particular the specification states, "the strips 26A and 26B are arranged parallel to the strips 24B and 24A and are *identically dimensioned so that the strips 26A and 26B are congruent* with the strips 24B and 24A below." Col. 2:32-35 (emphasis added); *see* Figure 2. Inherently this citation teaches that "substantially congruent" is something less than "identically dimensioned." Nintendo cites to the use of "alignment tolerances" as used in the specification. Col. 6:43-55. However, this citation refers to the impact alignment tolerances has on the formation of vias between the layers as opposed to the meaning of substantially. The specification does not limit "substantially" to "manufacturing tolerances."

Dictionaries and case law often define "substantially" as having a meaning consistent with "the same or very close." The Federal Circuit has construed "substantially" consistently with "the same or very close" in cases where the specification did not define the term of approximation at issue. *See Anchor Wall Sys. Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1310-11 (Fed. Cir. 2003) (stating that "words of approximation, such as 'generally' and 'substantially,' are descriptive terms . . . 'to avoid a strict numerical boundary'"); *see Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1366 (Fed. Cir. 2001) (defining "substantially" as "largely but not wholly that which is specified"); *see Liquid Dynamics Corp. v. Vaughan Co., Inc.*, 355 F.3d 1361, 1368 (Fed. Cir.

2004) (stating that "'substantial' is a meaningful modifier implying 'approximate,' rather than 'perfect'"). Additionally, dictionary definitions define "substantially" to mean "about" and "being largely but not wholly the specified thing." BLACK'S LAW DICTIONARY 1428-29 (6th ed. 1990); THE PENGUIN ENGLISH DICTIONARY 938 (1992); WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 1176 (1986). Thus, in the context of the '725 patent, "substantially congruent" means "having the same or very close shape and dimensions." Accordingly, the Court construes "substantially congruent to said first layer of conducting strips in a top view" as "having the same or very close shape and dimensions when viewed from the top."

substantially a width w, **substantially separated from each other by said width w**, and **having substantially the same dimensions and separation**

The central disagreement regarding "substantially a width w," "substantially separated from each other by said width w," and "having substantially the same dimensions and separation," is the meaning of "substantially." The Court has already construed "substantially," as "the same or very close." *See supra*. The terms do not require further construction.

overlying and **lying over**

Claims 1, 4, 5, 6, and 7 contain either the term "overlying" or "lying over" (collectively "overlying"). Lonestar argues that "overlying" does not require construction and in the alterative means "the second layer of conducting strips is above the first layer." Nintendo argues that "overlying" means "above, parallel to and identically dimensioned." The parties dispute whether "overlying" requires construction, and if so whether the second layer of conducting strips are parallel and identical in dimension to the first layer of conducting strips.

Both parties agree that "overlying" includes the concept of being above, and there is no

dispute that a jury will similarly understand the inclusion of this concept. As to the additional limitations sought by Nintendo, no construction for "overlying" is necessary because the phrase "substantially congruent to said first layer of conducting strips in a top view" found in claim 1 resolves the dispute as to the additional limitations that Nintendo seeks to add to the meaning of "overlying." The Court construed "substantially congruent to said first layer of conducting strips in a top view" as "having the same or very close shape and dimensions when viewed from the top." It follows from the Court's construction that the second layer of conducting strips will be positioned above the first layer of conducting strips so that the second layer of strips has the same or very close shape and dimensions as the first layer of strips from a top view. In addition, the Court is not convinced that "above" would be more instructive to the jury than the claim language itself. As such, no construction for "overlying" is necessary. The parties have agreed that "lie over" shall have the same construction, if any, as "overlying." Similar to "overlying," the claim language itself is the most appropriate construction. Accordingly, no construction is necessary for "overlying" and "lying over."

electrically separated from

Claim 1 contains the term "electrically separated from." Lonestar contends that the term means "the 'second layer of conducting strips' is separated from 'the first layer of conducting strips' by an insulating layer." Nintendo contends "electrically separated from" means "not electrically connected." The parties' dispute regards the extent of separation required by "electrically separated from."

The Court construes "electrically separated from" as "the 'second layer of conducting strips' is separated from the 'first layer of conducting strips' by a nonconducting layer." Nintendo's

construction suggests an absolute electrical separation that is inconsistent with claim 1 and the specification. "Electrically separated from" is used in the context of the surrounding claim 1 language of "said second layer of conducting strips overlying, electrically separated from and substantially congruent to said first layer of conducting strips." Col. 7:2-4. Thus, the claim refers to the second layer conducting strips and the first layer conducting strips as being electrically separated. Claim 1 then continues by stating:

> said first layer of conducting strips alternately connected to a first node and a second node, said second layer of conducting strips alternately connected to said first node and said second node in such a manner that each first layer conducting strip and a second layer conducting strip overlying said first layer conducting strip are connected to different nodes.

Col. 7:6-13. The claim states that both the first layer and second layer must be connected to the first node and second node. As a result, some strips in each layer are electrically connected. The strips in the first layer connected to the first node are electrically connected to the strips in the second layer that are also connected to the first node. The same is true for the strips in the first and second layers connected to the second node. These connections are also disclosed in the specification. The specification states, "All the strips 24A of the first layer and the strips 26A of the second layer are connected to form a common node. Likewise, the strips 24B of the first layer and the strips 26B of the second are connected to form a second common node." Col. 2:40-44. Thus, Nintendo's proposal that "electrically separated from" means "not electrically connected" is untenable in light of claim 1 and the specification.

The Court's construction includes that a nonconducting layer separates the first and second layers. The specification discloses a distance "d" between the first and second layers. Col. 3:9-10; Figure 3. The specification also discloses an insulating silicon dioxide layer separating the first and

second layers. *See* Col. 5:50-57. An insulating layer is understood by those of ordinary skill in the art to be nonconducting. This is consistent with the specification and claims. The specification and claims define the first and second layers as "conducting" and by implication the separation layer is nonconducting. In the context of the terminology of the specification and claims, "nonconducting" is more appropriate than Lonestar's proposed term "insulating," which may need its own construction. The '725 patent discloses examples of nonconducting materials, for instance, silicon dioxide and lantanium-modified lead zirconate tantalate. Col. 5:50-53, 58-61. Any of these materials may be used to separate the first and second layers. *See* Col. 5:39-61 (describing the process of forming a first layer of conducting strips and then depositing a layer of material over the first layer of conducting strips). Thus, the specification supports that the first and second layers are separated by nonconducting materials. Accordingly, the Court construes "electrically separated from" as "the 'second layer of conducting strips' is separated from the 'first layer of conducting strips' by a nonconducting layer."

a first node and **a second node**

Claims 1, 4, 6, 7, and 8 contain the term "node." The parties address "node" in the context of the claimed "a first node" and "a second node." Lonestar argues that "a first node" means "one of two 'opposing nodes' of the 'capacitor structure,' all portions of which are connected to each other in such a way as to enable them to be at the same voltage when the capacitor is operating, which voltage is different from that of the second and opposing node; the 'first node' is not electrically connected to the 'second node.'" Lonestar argues that "a second node" carries the same construction as "a first node" with the modification that the second node's "voltage is different from that of the first and opposing node; it is not electrically connected to the 'first node.'" Nintendo

proposes that "a first node" means "a common conducting structure," and "a second node" is "a common conducting structure different than the first node." Lonestar asserts that the nodes are the strips themselves and objects to Nintendo's construction as requiring the nodes to be a separate structure from the strips. Nintendo contends that because the claim recites that the strips and nodes are "connected," the nodes and strips must be separate structures.

The Court construes "a node" to mean "a conductor or conductors commonly connected." Claim 1 states, "conducting strips alternately *connected* to a first node and a second node." Col. 7:6-7 (emphasis added). Furthermore, the specification states, "[a]ll the strips 24A of the first layer and the strips 26A of the second layer are *connected to form* a common node," Col. 2:40-42 (emphasis added); "[t]here is also a capacitance between the strips *connected* to the nodes A and B and the substrate," Col. 2:58-60 (emphasis added); and "the strips which are *connected* to the opposite nodes." Col. 6:41-42 (emphasis added). These references in the specification thus refer to strips both as being "connected to form a common node" and being "connected to nodes." In one instance, this language seems to treat a strip as being a part of a node, and in the other instance, it treats the strips as being separate. For the conducting strips to be "connected to the nodes," the nodes and structures must be regarded as not being one in the same structure. If the strips were the same structures as the nodes, there would be no reason to state that there is a connection between the strips and the nodes.

While the nodes may be different from the strips, this does not preclude a node from including the strip. Neither the claims nor the specification create such a limitation. Thus, as described in the specification a strip may be a sub-structure of a node. This means that a strip that is connected to a node can also be a part of the common conducting structure that forms the node.

This applies to "a first node," "a second node," "said first and second nodes form two opposing nodes," and "alternately connected to a [said] first node and a [said] second node." Accordingly, the Court construes "a node" to mean "a conductor or conductors commonly connected."

said first and second nodes form two opposing nodes

Claim 1 contains the term "said first and second nodes form two opposing nodes." Lonestar contends that "said first and second nodes form two opposing nodes" means "two nodes of a capacitor structure are opposing when they are connected in such a way as to enable them to be at different voltages when the capacitor is operating." Nintendo contends that "said first and second nodes for two opposing nodes" means "the first node directly faces and forms a capacitor with the second node." The parties dispute whether "opposing" relates to charge, physical location, or structure. The term in question is found within a "whereby clause." In its arguments about the term "enhanced capacitor structure," which is also in the whereby clause, Lonestar argues that the whereby clause does not form a limitation of the claim.

Although "said first and second nodes form two opposing nodes" appears in a "whereby clause," the term requires construction because nowhere else in claim 1 is there a requirement to form "opposing nodes" other than in the whereby clause. Thus, "opposing nodes" adds a meaningful limitation to claim 1 rather than only stating an intended result. *Cf. Texas Instruments Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 1172 (Fed. Cir. 1993) ("[a] 'whereby' clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim"); *cf. In re Omeprazole Patent Litig.*, 536 F.3d 1361, 1370 (Fed. Cir. 2008) (refusing to read in a limitation where the term "enhanced stability" only referred to the intended result of the invention).

"Opposing" describes the charge rather than physical location or structure. When the '725

patent uses "opposing," to describe "nodes," the patent refers to charge. The Background of the Invention states, "To reduce the required area, designers have stacked multiple layers of metal which are alternately connected to form the opposing electrical nodes." Col. 1:24-27. "Electrical" defines what is meant by opposing in this sentence, and for nodes to be opposing in this context requires different electrical charge. While this excerpt is from the background section rather than a section dealing directly with the invention, there is no evidence that "opposing," when used to describe "nodes," means anything different in other parts of the patent. The Court construes "form two opposing nodes" as "form two electrically opposing nodes of a capacitor." The other language in the claim term, "said first and second nodes," has been construed in the Court's construction for "a first node" and "a second node;" thus further construction is not required.

alternately connected to a [said] first node and a [said] second node

Claim 1 contains the term "alternately connected to a [said] first node and a [said] second node. Lonestar argues that "alternately connected to a [said] first node and a [said] second node" means "consecutive strips in a given layer are alternately connected to, and thereby become part of, one of the two opposing nodes of the capacitor structure." Nintendo argues that "alternately connected to a [said] first node and a [said] second node" means "each strip in a given layer of the capacitor structure is connected to either the first node or second node in a manner such that no two adjacent strips are connected to the same node." The primary dispute revolves around potential interpretations of each party's construction and is whether only two strips or every strip in a layer must be alternately connected.

The Court construes "alternately connected to a [said] first node and a [said] second node" to mean "strips in a given layer of the capacitor structure are connected to either the first node or

second node in a manner such that adjacent strips of the capacitor structure are not connected to the same node." The specification discloses in regards to the strips in each layer that "[t]he strips are arranged alternately in parallel to each other so that a strip 24B is next to a strip 24A, which is next to a second strip 24B, which, in turn, is next to second strip 24A, and so on."[2] Col. 2:23-27; *see* Figure 2 *supra*. The same is true for strips in the second layer. *See* Col. 2:35-39; *see* Figure 2 *supra*. This results in an arrangement where adjacent strips are not connected to the same node because "B" strips in a layer separate "A" strips in that layer, and vice versa, based on the language, "strip 24B is next to a strip 24A, which is next to a second strip 24B . . . and so on." *See* Figure 2 *supra*. Also, the specification discloses in regards to the overlying strips that "each strip 24A of the first layer connected to node A has an overlying strip 26B connected to the opposing node B, and each strip 24B of the first layer has an overlying strip 26A of the second layer connected to the opposing node A." Col. 2:46-50. Thus, adjacent overlying strips are not connected to the same node because each strip in the first layer connected to the "A" node has an overlying strip in the second layer connected to the "B" node, and each strip in the first layer connected to the "B" node has an overlying strip in the second layer connected to the "A" node. As a result of the positioning of strips in each layer and between the first and second layers, adjacent strips of the capacitor structure are not connected to the same node. Thus, "strips in a given layer of the capacitor structure are connected to either the first node or second node in a manner such that adjacent strips of the capacitor structure are not connected to the same node." *See* Figure 2 *supra*.

However, the comprising language of the claim does not preclude the inclusion of other

[2]"A" and "B" represent node type. *See* Col. 2:40-44 ("All the strips 24A of the first layer and the strips 26A of the second layer are connected to form a common node. Likewise, the strips 24B of the first layer and the strips 26B of the second are connected to form a second common node.").

structures on the same layer. *See* Col. 6:65-66. "'Comprising' is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." *Genetech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997). As such, elements, including structures, can be added to the claimed invention so long as the thing created is within the scope of the claim. Thus, the Court's construction does not prevent the inclusion of other structures in a layer. Accordingly, the Court construes "alternately connected to a [said] first node and a [said] second node" to mean "strips in a given layer of the capacitor structure are connected to either the first node or second node in a manner such that adjacent strips of the capacitor structure are not connected to the same node."

enhanced capacitor structure

Claim 1 contains the term "enhanced capacitor structure." Lonestar contends that "enhanced capacitor structure" is not a claim limitation and requires no construction. If it is to be construed, Lonestar proposes that "an enhanced capacitor structure is any capacitor structure meeting the other requirements of claim 1." Nintendo contends that "enhanced capacitor structure" means that "the width and spacing of the strips is set to the critical dimension of the process used to manufacture the capacitor structure." The parties dispute whether "enhanced capacitor structure" requires construction and whether the term is limited to "critical dimension."

No construction is necessary for "enhanced capacitor structure" because this term in the "whereby" clause states only the result of the limitations found in claim 1.[3] *See Texas Instruments Inc.*, 988 F.2d at 1172 ("[a] 'whereby' clause that merely states the result of the limitations in the

[3]The Court construed "form two opposing nodes" in the whereby clause because this language creates a limitation as discussed above. In contrast, creating an "enhanced capacitor structure," only states the end result produced by the limitations stated previously in claim 1.

claim adds nothing to the patentability or substance of the claim"); *see In re Omeprazole Patent Litig.*, 536 F.3d at 1370 (refusing to read in a limitation where the term "enhanced stability" only referred to the intended result of the invention). The "whereby" clause in claim 1 states "whereby said first and second nodes form two opposing nodes of an enhanced capacitor structure." Col. 7:14-15. "Enhanced capacitor structure" only points to the final result of creating an enhanced capacitor structure. No limitations not previously set forth in claim 1 are understood from "enhanced capacitor structure;" thus, construction of "enhanced capacitor structure" is not required.

said third layer of conducting strips alternately connected to said first and second nodes and **in such a manner that a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes**

Claim 4 contains the term "said third layer of conducting strips alternately connected to said first and second nodes in such a manner that a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes." Lonestar argues this term means "consecutive strips in the third layer are alternately connected to, and thereby become part of, one of the two opposing nodes of the capacitor structure." Nintendo argues this term means "a third layer of conducting strips overlying said second layer of conducting strips are connected to different nodes—no conducting strip in the third layer is connected to the same node as any conducting strip in the second layer." The parties' primary dispute is whether claim 4 requires that the entire second and third layers be connected to different nodes.

To aid the jury, the Court will separately construe the two phrases of the claim limitation in question. The Court first construes "said third layer of conducting strips alternately connected to said first and second nodes," as "strips in the third layer of the capacitor structure are connected to either the first node or second node in a manner such that adjacent strips of the capacitor structure

are not connected to the same node." This construction is consistent with the construction of "alternately connected" in claim 1. In claim 1, the Court construes "alternately connected to a [said] first node and a [said] second node" to mean "strips in a given layer of the capacitor structure are connected to either the first node or second node in a manner such that adjacent strips of the capacitor structure are not connected to the same node," equating "alternately connected" to "adjacent strips of the capacitor structure are not connected to the same node." Thus, the Court construes "said third layer" being "alternately connected to said first and second nodes," to mean that the adjacent strips of the capacitor are not connected to the same node. Also as construed in claim 1, the comprising language does not preclude other structures on the same level. Col. 7:30-31. Accordingly, the Court construes "said third layer of conducting strips alternately connected to said first and second nodes," as "strips in the third layer of the capacitor structure are connected to either the first node or second node in a manner such that adjacent strips of the capacitor structure are not connected to the same node."

The Court construes "in such a manner that a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes" as "third layer of strips overlie second layer strips such that individual overlying third layer strips are connected to a different node than corresponding underlying second layer strips." Nintendo argues that claim 4 requires that "no conducting strip in the third layer is connected to the same node as any conducting strip in the second layer." Nintendo admits this construction does not make sense but contends the claim also does not make sense. Nintendo argues that "[e]ven 'a nonsensical result does not require the court to redraft the claims of the . . . patent.'" Nintendo's Br. 28 (quoting *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004)).

Construing "a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes" to mean that the entire second and third layers are connected to different nodes would render claim 4 in conflict with the description provided in the specification and claims. Adjacent strips in the second layer are not connected to the same node as described in the specification and claim 1. *See* Col. 2:35-39; *see* Col. 7:6-13. Thus, construing the term to require the entire second and third layers be connected to different nodes does not make sense since individual adjacent strips in the second layer are connected to different nodes as described in claim 1. Likewise, the specification notes that a third layer would also include "an equal number of 'A' and 'B' conducting strips." Col. 5:19-25. In contrast, construing "a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes" to mean that the individual overlying strips in the third layer are connected to different nodes than the individual strips in the second layer is consistent with individual adjacent strips in the layers being connected to different nodes as described in the specification and claim 1.

In *Chef America*, the court refused to apply a construction for the purpose of avoiding a nonsensical result. *Chef Am.*, 358 F.3d at 1374. However, *Chef America* qualifies its rule stating, "*Where, as here, the claim is susceptible to only one reasonable construction* . . . we must construe the claims based on the patentee's version of the claim as he himself drafted it." *Chef Am.*, 358 F.3d at 1374 (citation omitted) (emphasis added). Unlike the claim in *Chef America*, the language in claim 4 is susceptible to more than one reasonable construction. Claim 4 states "a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes," which could mean that the individual overlying strips in the third layer are connected to different nodes than the individual strips in the second layer or that the entire second and third layers are

connected to different nodes. Thus, this case is distinguished from *Chef America*, and the *Chef America* holding does not apply.

The specification supports that "a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes," means that the individual overlying strips in the third layer are connected to different nodes than the individual strips in the second layer. The specification states:

> The present invention readily allows stacking of multiple layers of conducting strips for increased capacitance. Since each layer has an equal number of "A" and "B" conducting strips, each opposing node is balanced with an additional layer of strips. Thus a third layer of conducting strips may be added with no problem for increasing the capacitance.

Col. 5:19-25. This excerpt states that "each layer has an equal number of 'A' and 'B' conducting strips." Thus, the third layer has an equal number of "A" and "B" conducting strips, which means that the entire third layer cannot be attached to a single node. Construing "a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes" to mean that the entire second and third layers are connected to different nodes would put claim 4 at odds with the specification. The scenario posed by this construction would require the entire third layer to be attached to a single node and thus inconsistent with "each layer" having "an equal number of 'A' and 'B' conducting strips." In contrast, construing the term to mean that the individual overlying strips in the third layer are connected to different nodes than the individual strips in the second layer is consistent with "each layer" having "an equal number of 'A' and 'B' conducting strips."

Accordingly, the Court construes "a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes" to mean that the individual overlying strips in the third layer are connected to different nodes than the individual strips in the second layer.

Thus, the Court construes "in such a manner that a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes" as "third layer of strips overlie second layer strips such that individual overlying third layer strips are connected to a different node than corresponding underlying second layer strips."

[is] formed as part of an integrated circuit formed on said semiconductor substrate

Claim 12 contains the term "[is] formed as part of an integrated circuit formed on said semiconductor substrate." Lonestar contends that "[is] formed as part of an integrated circuit formed on said semiconductor substrate" means "the capacitor structure is one of a combination of interconnected circuit elements etched, deposited or created on the semiconductor substrate, and formed as part of an integrated circuit fabrication process." Nintendo contends that no construction is necessary. The dispute is whether construction is necessary for the jury to understand the term, and if so, whether that construction should include Lonestar's additional limitations.

The Court construes "integrated circuit" as "a combination of multiple circuit elements." Lonestar cites to a dictionary to define "integrated circuit" as "A combination of interconnected circuit elements inseparably associated on or within a continuous substrate." THE AUTHORITATIVE DICTIONARY OF IEEE STANDARDS TERMS 570 (7th ed. 2000). Nintendo on the other hand does not offer any intrinsic or extrinsic evidence on the meaning of "integrated circuit" or why the term does not require construction. Instead, the only support Nintendo's briefs offer on "integrated circuit" is a general assertion that no construction is necessary for "[is] formed as part of an integrated circuit formed on said semiconductor substrate" while not providing any support for why "integrated circuit" does not require construction. In fact, Nintendo did not make a single statement specific to "integrated circuit" in its briefs. Even when the Court prompted a discussion about the meaning of

"integrated circuit" at the *Markman* Hearing, Nintendo still did not provide any intrinsic or extrinsic evidence to support its position on "integrated circuit." As a result, the Court has only the extrinsic evidence provided by Lonestar for guidance on construing "integrated circuit" and observes that the Court's construction is consistent with Lonestar's dictionary definition. A jury would not require further detail to understand the meaning of "integrated circuit," and the Court accordingly does not further complicate its construction.

As for the remaining portion of the claim term in question, additional construction is not needed. The Court has construed "semiconductor substrate" as "a semiconducting base material having resistivity between a metal and an insulator." Additionally, a jury would understand "on a semiconductor substrate" to mean that elements are located on the semiconductor substrate. No further construction is necessary.

Lonestar's construction works more to complicate rather than clarify the claim term. Lonestar proposes "the capacitor structure is one of a combination of interconnected circuit elements etched, deposited or created on the semiconductor substrate, and formed as part of an integrated circuit fabrication process." Lonestar's use of "interconnected" rather than "integrated" does not substantially clarify the language. Also, Lonestar includes details of the circuit fabrication process that unnecessarily complicates the claim term, using words particular to the circuit fabrication industry like "etched." Thus, Lonestar's proposed construction would not advance the purpose of clarifying claim terms to a jury.

Furthermore, there is no support in the claim language for adding limitations regarding the circuit fabrication process. Claim 12 simply states "[is] formed as part of an integrated circuit." No further limitation is indicated. Lonestar's proposed circuit fabrication process limitations arise from

the specification. *See* Col. 5:29-57 (applying "deposited" and "etching" language). However, "[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc.*, 156 F.3d at 1187. Lonestar derives its proposed limitations from the Detailed Description of Specific Embodiments. *See* Col. 5:29-57. Thus, the Court declines to read in Lonestar's proposed limitations regarding the circuit fabrication process. Accordingly, the Court construes "integrated circuit" as "a combination of multiple circuit elements."

CONCLUSION

For the foregoing reasons, the Court interprets the claim language in this case in the manner set forth above.

So ORDERED and SIGNED this 14th day of April, 2009.

LEONARD DAVIS
UNITED STATES DISTRICT JUDGE

APPENDIX A

What is claimed is:

1. On a **semiconductor substrate**, a capacitor structure comprising
a first layer of conducting strips parallel to each other on said substrate; and

a second layer of conducting strips parallel to each other, said **second layer of conducting strips overlying**, **electrically separated from** and **substantially congruent to said first layer of conducting strips in a top view**;

said first layer of conducting strips **alternately connected to a first node and a second node**, said **second layer of conducting strips** alternately **connected to** said first node and said second node in such a manner that each first layer conducting strip and a second layer conducting strip **overlying** said first layer conducting strip are **connected to** different nodes;

whereby **said first and second nodes form two opposing nodes** of an **enhanced capacitor structure**.

2. The capacitor structure of claim 1 wherein both first and second conducting layer strips comprise metal.

3. The capacitor structure of claim 1 wherein said first layer of conducting strips have **substantially a width w**, a height h, and are **substantially separated from each other by said width w**, said **second layer of conducting strips having substantially the same dimensions and separation**, said first layer of conducting strips being separated from said **second layer of conducting strips** by distance d, the relationship between w, h and d being $w^2 < 2hd$.

4. The capacitor structure of claim 1 further comprising

a **third layer of conducting strips** parallel to each other, said **third layer of conducting strips overlying** and

substantially congruent to said **second layer of conducting strips** in a top view;

said third layer of conducting strips alternately connected to said first and second nodes in such a manner that a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes.

5. The capacitor structure of claim 1 wherein said conducting strips of said first and second layers have first and second ends, said first layer of conducting strips being alternately connected at said first ends by a first base strip and at said second ends by a second base strip, said **second layer of conducting strips** connected at said first ends by a first base strip and at said second ends by a second base strip, said first base strip of said first layer being **connected to** said first base strip of said second layer and said second base strip of said first layer being **connected to** said second base strip of said second layer so that said conducting strips **connected to** said first base strip of said second conducting layer **lie over** said conducting strips **connected to** said second base strip of said first conducting layer and said conducting strips **connected to** said second base strip of said second conducting layer **lie over** said conducting strips **connected to** said first base strip of said first conducting layer.

6. The capacitor structure of claim 5 further comprising

a **third layer of conducting strips** parallel to each other, said **third layer of conducting strips overlying** and being substantially congruent to said **second layer of conducting strips** in a top view;

said **third layer of conducting strips** being alternatively **connected to** said first and second nodes in such a manner that third layer conducting strips **overlying** said second layer conducting strips are **connected to** different nodes.

7. The capacitor structure of claim 6 further comprising

a fourth layer of conducting strips parallel to each other, said fourth layer of conducting strips **overlying** and substantially congruent to said **third layer of conducting strips** in a top view;

said fourth layer of conducting strips alternately **connected to** said first and second nodes in such a manner that third layer conducting strips **overlying** said second layer conducting strips are **connected to** the same nodes.

8. The capacitor structure of claim 1 wherein the number of first conducting layer strips equal the number of second conducting layer strips, and the number of first conducting layer strips **connected to** said first node is equal to the number of first conducting layer strips **connected to** said second node.

9. The capacitor structure of claim 1 wherein said first and **second layer of conducting strips** are separated by an insulating layer of silicon dioxide.

10. The capacitor structure of claim 1 wherein said first and **second layer of conducting strips** are separated by an insulating layer of a ferro-electric ceramic having an extremely high dielectric constant.

11. The capacitor structure of claim 10 wherein said ferro-electric ceramic comprises PLZT.

12. The capacitor structure of claim 1 wherein said capacitor structure **is formed as part of an integrated circuit formed on said semiconductor substrate**.

APPENDIX B

U.S. Patent No. 5,208,725	
TERMS AND PHRASES	**PARTIES' AGREED CONSTRUCTION**
"second layer of conducting strips" (Claim 1)	The "second" layer of conducting strips is the next consecutive layer of conducting strips above the first layer of conducting strips.
"third layer of conducting strips" (Claim 4)	The "third" layer of conducting strips is the next consecutive layer of conducting strips above the second layer of conducting strips.
"lie over" (Claim 5)	[No construction necessary.]
"connected to" (Claim 1)	Electrically connected.

TERMS AND PHRASES	**COURT'S CONSTRUCTION**
"semiconductor substrate" (Claim 1)	A semiconducting base material having resistivity between a metal and an insulator.
"a first layer of conducting strips parallel to each other on said substrate" (Claim 1)	The phrase "on said substrate" means positioned directly or indirectly above said semiconductor substrate.
"substantially congruent to said first layer of conducting strips in a top view" (Claim 1)	Having the same or very close shape and dimensions when viewed from the top.
"substantially a width w" (Claim 3)	"Substantially" means the same or very close.
"substantially separated from each other by said width w" (Claim 3)	"Substantially" means the same or very close.
"having substantially the same dimensions and separation" (Claim 3)	"Substantially" means the same or very close.
"overlying" (Claim 1)	[No construction necessary.]

"electrically separated from" (Claim 1)	The "second layer of conducting strips" is separated from the "first layer of conducting strips" by a nonconducting layer.
"a first node" "a second node" (Claim 1)	A "node" is a conductor or conductors commonly connected.
"said first and second nodes form two opposing nodes" (Claim 1)	"Form two opposing nodes" means form two electrically opposing nodes of a capacitor.
"alternately connected to a [said] first node and a [said] second node" (Claim 1)	Strips in a given layer of the capacitor structure are connected to either the first node or second node in a manner such that adjacent strips of the capacitor structure are not connected to the same node.
"enhanced capacitor structure" (Claim 1)	[No construction necessary.]
"said third layer of conducting strips alternately connected to said first and second nodes" (Claim 4)	Strips in the third layer of the capacitor structure are connected to either the first node or second node in a manner such that adjacent strips of the capacitor structure are not connected to the same node.
"in such a manner that a third layer of conducting strip overlying said second layer of conducting strip are connected to different nodes" (Claim 4)	Third layer of strips overlie second layer strips such that individual overlying third layer strips are connected to a different node than corresponding underlying second layer strips.
"[is] formed as part of an integrated circuit formed on said semiconductor substrate" (Claim 12)	An "integrated circuit" is a combination of multiple circuit elements.